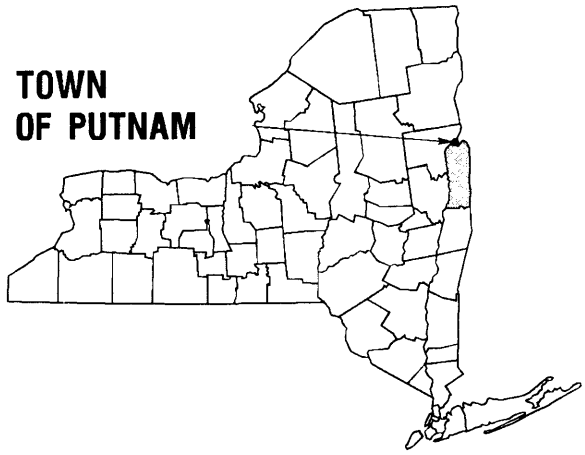
FLOOD INSURANCE STUDY

TOWN OF PUTNAM, NEW YORK
WASHINGTON COUNTY



REVISED:
NOVEMBER 20, 1996

Federal Emergency Management Agency

COMMUNITY NUMBER - 361236

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial FIS Effective Date: August 19, 1986

Revised FIS Date: November 20, 1996

TABLE OF CONTENTS

TABLE OF CONTENTS - continued

FLOOD INSURANCE STUDY
TOWN OF PUTNAM, WASHINGTON COUNTY, NEW YORK

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates a previous FIS/Flood Insurance Rate Map (FIRM) for the Town of Putnam, Washington County, New York. This information will be used by the Town of Putnam to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development.

In some States or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

For the original, August 19, 1986, FIS, the hydrologic and hydraulic analyses were prepared by Camp, Dresser & McKee, Environmental Engineers, during the preparation of the FIS for the Town of Plattsburgh (Reference 1). That work was completed in November 1977.

For this revision, the hydrologic and hydraulic analyses were prepared by Leonard Jackson Associates, for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-93-C-4145. This work was completed in August 1994.

1.3 Coordination

The purpose of an initial Consultation Coordination Officer's (CCO) meeting is to discuss the scope of the FIS. A final CCO meeting is held to review the results of the study.

For the August 19, 1986, FIS, a final CCO meeting was held on September 12, 1985, and was attended by representatives of the town and FEMA.

For this revision, FEMA notified the town by letter on December 19, 1994, that a revision to its FIS would be prepared using Leonard Jackson Associates' analyses. FEMA also contacted the New York State Department of Environmental Conservation and the Lake George Commission for information.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the incorporated area of the Town of Putnam, Washington County, New York. The area of study is shown on the Vicinity Map (Figure 1).

For the August 19, 1986, FIS, Lake Champlain was studied by detailed methods. For this revision, Lake George was studied by detailed methods for its entire shoreline within the community. Limits of detailed study are indicated on the FIRM (Exhibit 1). The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

2.2 Community Description

The Town of Putnam is located in the northern corner of Washington County in northeastern New York. It is bordered by the Town of Hague to the west, the Town of Dresden to the south, the Towns of Benson and Orwell to the east, and the Town of Ticonderoga to the north.

2.3 Principal Flood Problems

The principal sources of flooding in the Town of Putnam are Lake Champlain and Lake George.

2.4 Flood Protection Measures

No flood control structures exist or are planned in the Town of Putnam.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1-percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to

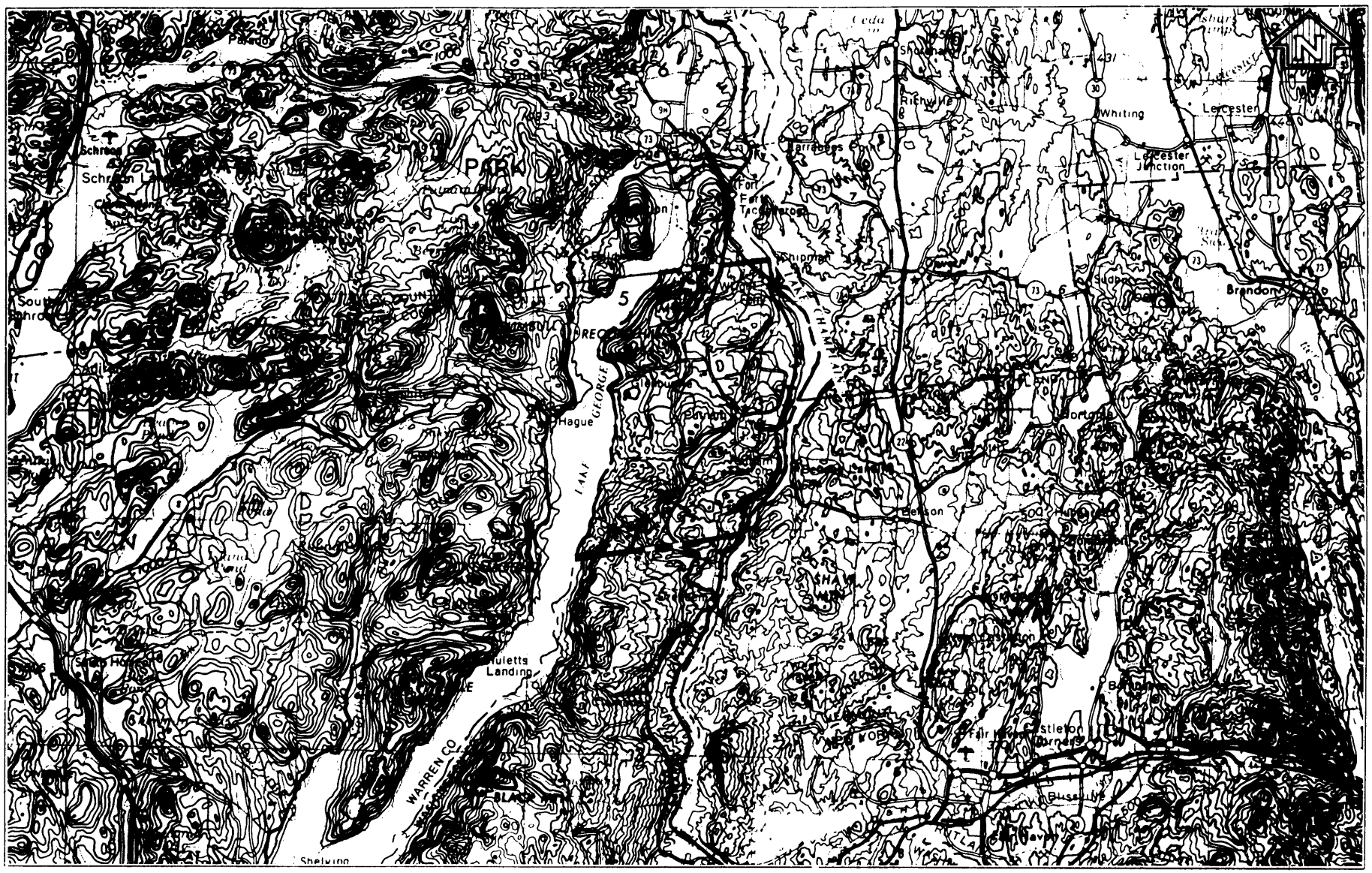


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF PUTNAM, NY

(WASHINGTON CO.)

APPROXIMATE SCALE

4 0 4 8 12 MILES

VICINITY MAP

approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic and Hydraulic Analyses

Analyses were carried out to establish the peak elevation-frequency relationships for the flooding sources studied in detail affecting the community.

Stillwater elevations for Lake Champlain were obtained from the FIS for the Town of Plattsburgh (Reference 1). The elevations in that FIS were determined by a graphical frequency analysis using data from the Rouses Point gage located near Plattsburgh on the western shore.

The elevation of Lake George, which has a drainage area of 233 square miles, is regulated by flood gates at Ticonderoga. Daily lake levels from September 1, 1913, to September 30, 1990, were obtained from the U.S. Geological Survey gaging station at Roger's Rock. The maximum gage height observed was 5.1 feet on April 9, 1936. The 100-year frequency flood level of 5.2 feet was then obtained using a log-Pearson analysis. The datum of the gage at Roger's Rock is 315.9 feet, giving a 100-year frequency flood elevation of 321.1 feet (Reference 2).

A summary of peak elevation-frequency relationships for Lake Champlain and Lake George is shown in Table 1, "Summary of Stillwater Elevations."

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS

	ELEVATION (feet)			
FLOODING SOURCE AND LOCATION	10-YEAR	50-YEAR	100-YEAR	500-YEAR
LAKE CHAMPLAIN At Plattsburgh, New York	101.01	101.76	101.97	102.32
LAKE GEORGE Entire shoreline within community	*	*	321.1	*

*Data not available

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS generally provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the streams studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. The boundaries were interpolated between cross sections using topographic maps (Reference 3).

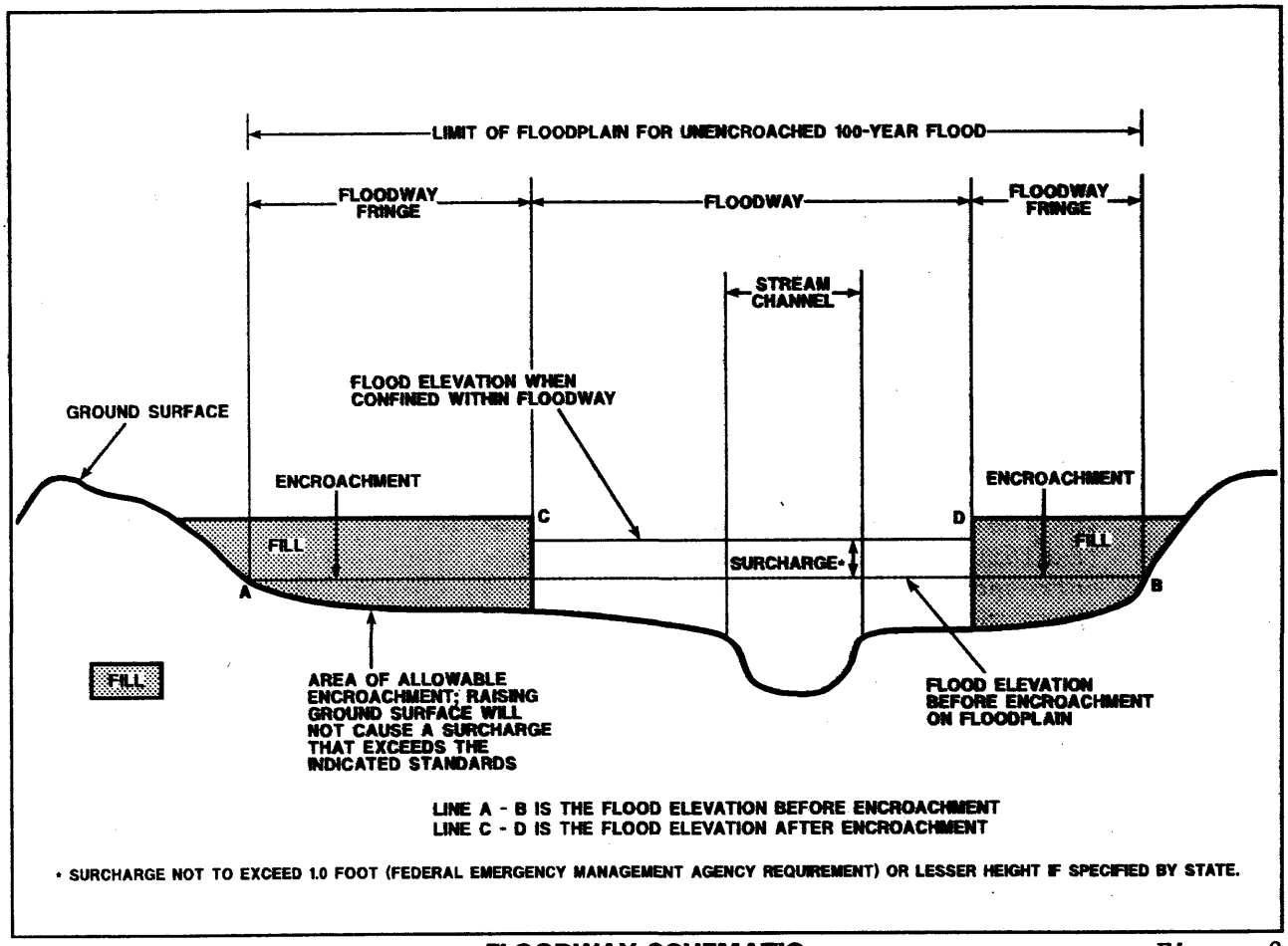
The 100- and 500-year floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zone AE), and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood

by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.



FLOODWAY SCHEMATIC Figure 2

The floodway concept is inapplicable in areas of lacustrine flooding; therefore, no floodways were computed for this FIS.

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths

are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

7.0 OTHER STUDIES

FISs have been prepared for the Towns of Dresden and Ticonderoga (References 4 and 5). A FIRM has been prepared for the Town of Hague (Reference 6).

Because it is based on more up-to-date analyses, this FIS supersedes the previously printed FIS for the Town of Putnam (Reference 7).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, Mitigation Division, 26 Federal Plaza, Room 1351, New York, New York 10278.

9.0 BIBLIOGRAPHY AND REFERENCES

1. Federal Emergency Management Agency, Flood Insurance Study, Town of Plattsburgh, Clinton County, New York, Washington, D.C., September 28, 1979.

2. New York State Department of Environmental Conservation, 100-Year Frequency Flood Elevation, Lake George, August 1992.

3. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 Feet: Putnam, New York-Vermont; 1950; Ticonderoga, New York-Vermont, 1950; Orwell, Vermont-New York, 1950.

4. Federal Emergency Management Agency, Flood Insurance Study, Town of Dresden, Washington County, New York, Washington, D.C., September 20, 1996.

5. Federal Emergency Management Agency, Flood Insurance Study, Town of Ticonderoga, Essex County, New York, Washington, D.C., September 6, 1996.

6. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Hague, Warren County, New York, Washington, D.C., September 29, 1996.

7. Federal Emergency Management Agency, Flood Insurance Study, Town of Putnam, Washington County, New York, Washington, D.C., August 19, 1986.